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"Ballistic Missile Defense: A National Imperative"

Journal on Practical Applications in Space

November 1989

Introduction

Space operations and national security interests are undeniably intertwined. The U.S., Soviet Union, and many other nations rely extensively on space systems for their economic and military well-being. This synergistic relationship between space and national security interests will become even stronger in the future as more nations gain the benefits of space operations.

Space systems currently provide the U. S. military with required communications, navigation, and surveillance capabilities. Satellites provide the long-haul voice and data communications required for effective command of dispersed combat forces over large geographic areas. With the deployment of the new NAVSTAR Global Positioning System, precise navigation information will be available for our ground, air, and sea operations worldwide. Military surveillance satellites provide real-time environmental information and missile warning to forces, assisting in operations planning and attack warning.

This missile warning function is perhaps the most important performed by military space systems today because it provides warning against the greatest single threat to this country, the nuclear ballistic missile. Space surveillance systems provide our decision makers with the information necessary to decide on retaliatory courses of action using the United States strategic offensive forces. This is today's backbone of deterrence.

Today, information from missile warning satellites and radars allows the United States to rapidly detect a ballistic missile attack. Should operators at the missile warning sites and Cheyenne Mountain detect a ballistic missile attack against North America, they can only provide national leaders with warning that an attack is under way. While the tactical warning and attack assessment system does an excellent job providing this warning, our military has no defensive bullets to actively defend the nation against missile attack, should deterrence fail.

Across virtually the entire spectrum of defensive operations, there are essentially five functions which must be performed to defend against an attack. These are: detect, track, identify, engage, and assess the engagement. These five basic functions are required for any defense, whether air, land, sea, or space. Today, with regard to a ballistic missile attack, the U.S. does the first three with an extremely high degree of confidence. But America is completely without the resources to engage and destroy attacking ballistic missiles. The U.S. is without the means to prevent enemy warheads from falling on their

Accession Number: 2932

Publication Date: Nov 01, 1989

Title: Ballistic Missile Defense: A National Imperative

Personal Author: Piotrowski, J.L., General

Corporate Author Or Publisher: Journal on Practical Applications in Space, November, 1989 Report Number: STARL

Comments on Document: article preprint. STARLAB RRI

Descriptors, Keywords: Ballistic Missile Defense SDI BMD Space Operation Security System Threat Criticism Assessment Strategic Issue Nuclear Deterrence Surveillance Navigation Military Communication Satellite

Pages: 00021

Cataloged Date: May 28, 1991

Document Type: HC

Number of Copies In Library: 000001

Record ID: 22054

Source of Document: RRI

targets. It amazes me that this country has provided virtually all our fighting forces with technologically superior defensive systems: ground-to-air intercept missiles, air-to-air interceptors, ship-to-ship and ship-to-air intercept missiles, but has not provided a defensive system against the most threatening weapon postured against our **homeland.**

The time has come to develop and deploy a ballistic missile defense (BMD) system to reduce the threat from these destructive weapons. The deployment of such a defensive system, along with a modernized strategic offense, will offer America a far more attractive option than mutual vulnerability, which currently holds both sides hostage to each other's massive arsenal of nuclear-tipped ballistic missiles.

This article explains the ballistic missile threat to our country, describes and refutes the most common arguments against BMD, and provides reasons why the United States should deploy a ballistic missile defense system. Finally, an operational assessment of a first-phase BMD system is presented.

The Threat

Since the U.S. has no ballistic missile defenses today, nuclear deterrence is provided solely by the threat of offensive retaliation. While this policy has served us well for nearly four decades, if deterrence failed, for whatever reason, our nation could be destroyed in minutes by Soviet nuclear weapons.

Despite Soviet pronouncements, their strategic arsenal continues to grow. In 1972, the Soviets had approximately 2,000 nuclear warheads. Today, they have about 10,000 and by the mid-1990s, assuming the continuation of their current growth rate, they could be in a position to deploy over 15,000 warheads.

Although most Americans are optimistic that the ongoing strategic arms reduction talks could significantly reduce the arsenals on both sides, it is apparent that any such agreement will still leave both superpowers with significant numbers of ballistic missiles.

Today, the United States is **debating** whether to develop highly mobile, survivable offensive nuclear forces, while the Soviets **are deploying** them. In the past four years, they've deployed two new highly survivable ICBMs, the rail-mobile SS-24 and the road-mobile SS-25. In addition, they continue to improve their ballistic missile submarines and the missiles they carry. Today, all of their modern Delta and Typhoon ballistic missile submarines can launch missiles and strike America without even leaving Soviet territorial waters. Simply stated, the Soviets' nuclear arsenal continues to grow and improve in all areas, and we have no way to actively defend ourselves if deterrence were to fail.

While the threat to our survival today is primarily from the Soviet Union, tomorrow's may come from elsewhere. The number of countries possessing medium-range ballistic missiles has increased dramatically in the last few years. That, plus the proliferation of nuclear, biological, and chemical weapons throughout the world, requires that we assess our long-term security needs in a broader context than an East-West conflict alone. CIA Director William Webster recently gave the Congress this sobering assessment: by the turn of the century "at least 15 developing countries will be producing their own ballistic missiles" and that "20 countries may **already** be manufacturing chemical weapons." Clearly, we no longer live in a bipolar world. It is chilling or frightening to consider that hostile countries, or their surrogates, may be capable of attacking us with ballistic missiles in the coming decade. We must not delude ourselves into thinking such a situation could not occur.

In 1961, General Douglas MacArthur stated, "Global war has become a Frankenstein's monster, threatening to destroy both sides . . . . It contains now only the germs of double suicide." Today, this threat of global suicide is even greater than it was in 1961. It is imperative for the United States, and indeed the world, to begin transition to defense strategies. Examining options for a ballistic missile defense system is a necessary step toward this end.

Arguments against BMD

The most often heard arguments from critics against deployment of a ballistic missile defense system are: it won't work, it won't be leakproof, it costs too much, it would invite the Soviets to attack, and that testing and deployment would cause the United States to abrogate the 1972 Antiballistic Missile Treaty. Let me address each argument.

It won't work. When President Reagan sounded the challenge in 1983 to focus the technological might of our nation on a defensive system, he proposed that ". . . the scientific community, those who gave us nuclear weapons, to turn their great talents now to the cause of mankind and world peace, to give us the means of rendering these nuclear weapons impotent and obsolete." Many people (including many leading scholars and scientists) stated that a BMD system was not technologically feasible. Since then, remarkable technological advances have taken place, which have shown that those people's judgments were premature. A noted astronomer once stated, "Anytime an elderly or distinguished scientist says it's technologically impossible to do a thing, it means it's about to be done." A BMD system is at least as technologically feasible today as putting a man on the moon was in 1961 when President Kennedy announced that goal.

In 1984, an SDI interceptor missile, called the Homing Overlay Experiment, intercepted a simulated warhead in space demonstrating the feasibility of nonnuclear hit-to-kill ground-based interceptors, or "hitting a bullet with a bullet." That was **five years ago.** That technology is the basis for one element of a Phase I BMD engagement system, the Exoatmospheric Reentry Vehicle Interceptor System (ERIS). Furthermore, the successful demonstration of missile detection and tracking capabilities for a Space-Based Interceptor (SBI) in August of this year demonstrated critical technologies for booster and post-boost vehicle engagements. These two Phase I technologies are vital if layered ballistic missile defenses are to be deployed. Both are well on their way to proving themselves.

These successes are not the only impressive technological gains recently achieved. Tests of neutral particle beams and the Alpha and the MIRACL lasers earlier this year provide evidence of progress on systems that could be deployed in a follow-on system. When former SDIO Director Lt Gen Abrahamson wrote in his end-of-tour report earlier this year that "The investment of the last five years is clearly starting to pay off," he was not exaggerating.

It will not be leakproof. The first phase of a ballistic missile defense system which this nation could deploy will not stop all the missiles in the Soviet Union's inventory. It's not designed to. Considering the huge inventory of Soviet ballistic missiles today, some warheads in a massive Soviet attack would

penetrate a Phase I BMD system and find their targets. It must be emphasized, however, that an **initial** deployment phase of a BMD system is designed not only to engage a portion of the Soviet inventory, but **also** to deter a nuclear ballistic missile attack by increasing the operational uncertainties associated with a Soviet attack which would decrease Soviet confidence in achieving desired attack outcomes, and by complicating Soviet response options. Although follow-on phases will continue to increase the overall effectiveness of the BMD system, a **perfect** defense is highly unlikely, in fact, probably impossible.

The fundamental question is whether a perfect ballistic missile defense system is required. While critics often point out that if even one missile penetrates our defenses, the consequences would be catastrophic, they are missing the point. Today, the United States has **no** active missile defense whatsoever. A first-phase ballistic missile defense which would ensure that many of the **initial** warheads in a Soviet attack would be destroyed would greatly enhance deterrence. It's those warheads that could destroy the National Command Authorities' ability to communicate with our retaliatory forces. It's those warheads that might catch our strategic bombers on the ground, our intercontinental ballistic missiles in their silos, and our ballistic missile submarines in port. If the Soviet leadership believed many of their attacking warheads would be destroyed prior to knocking out our forces, and thus assuring U.S. retaliation, it becomes even more unlikely they would attack in the first place. This enhances deterrence.

Should an attack occur, a Phase I BMD system would also reduce American casualties and enhance the prospects for national survival and recovery. While any nuclear attack is a horrible event to ponder, a defense is morally and militarily superior to the consequence of having no active defense at all.

Recently, a gentleman compared a ballistic missile defense to an umbrella with many holes in it, saying "it's 90 percent effective and it's got 10 percent holes in it" and asked if anyone would buy this umbrella. It's unfortunate that this gentleman didn't know the difference between rain and ballistic missiles. Rain is an act of God and can't be deterred. The launch of ballistic missiles is an act of man and can be stopped. If we build a system that could destroy the initial wave of Soviet ballistic missiles, then the Soviets who have to be absolutely certain that they can achieve their goals . . . that they can destroy America--would have to take a much harder second look. So while we can't stop the rain from ever occurring with that umbrella, we can contribute to deterring an attack in the first place even with a less than perfect defense.

It costs too much. President Kennedy stated in his inaugural address: "America can afford to be strong, she cannot afford to be weak." The current cost estimate of the Phase I BMD system is about $70 billion. While this is a tremendous amount of money, it is relatively small when compared to past national undertakings. In the 1960s, when President Kennedy said the United States was going to put a man on the moon in ten

years, the nation spent approximately $100 billion in today's dollars to accomplish this feat. At the same time, we were spending millions of dollars **per day** maintaining hundreds of thousands of troops in Vietnam. With the same dollars that we spent for the Apollo Program, a relatively robust ballistic missile defense system could be deployed today.

Furthermore, the United States recently decided to bail out failed or failing Savings and Loan institutions with estimates of the total costs over $200 billion . . . about $600 per taxpayer. If the United States can afford to make these financial institutions healthy again, it can afford to defend the country from ballistic missile attack, at significantly less cost.

Dr Martin Luther King, Jr said, "Freedom has always been an expensive thing." Would $70 billion to put our future back in our own hands and start down the road to making nuclear ballistic missiles obsolete be money well spent? I believe it would. To move our nation from a purely offensive nuclear retaliatory strategy to one combining defenses with modernized offenses is a morally, and strategically responsible course to take.

It would invite the Soviets to attack and is, thus, destabilizing. This argument ignores the ability of a BMD system to complicate Soviet strategic planning. Soviet planners could not predict with certainty which targets would be destroyed and, thus, could not predict the outcome of an attack. This

uncertainty would **strengthen** strategic stability and lessen the likelihood of attack. A more stable and safer world would be one in which both superpowers possess strategic defenses and reduced, but modernized, strategic offenses.

Another related argument is that the development of a BMD system would encourage the Soviets to attack the U.S. prior to or during the operational deployment of a system. This argument assumes the Soviet leadership is irrational with regards to their own survival. This defies logic and history. The Soviets have always been extremely realistic and rational in matters that relate to the survival of the Soviet state. And today, this is still true. They are not about to destroy themselves by attacking us for developing a capability which they currently possess.

As Karl Von Clausewitz wrote in On War, "When one has used defensive measures successfully, a more favorable balance of strength is usually created." The Soviets believe such principles and have deployed around Moscow the only operational ballistic missile system and are currently upgrading it. They have defensive options, while the United States is limited to retaliatory attack, thus not contributing to this "favorable balance of strength."

Deployment will violate the 1972 ABM Treaty. The current Strategic Defense Initiative is a research program designed to provide a basis for an informed decision regarding the technical feasibility of eliminating the ballistic missile threat. It is imperative for our nation to complete this research program and move the U.S. to a national security posture that combines strategic defenses with modernized strategic offenses. To date, no demonstrations of BMD technology have violated any treaties between the United States and the Soviet Union.

As advances in technology allow the U.S. to get closer to a deployment decision, our national leadership must decide if the ABM Treaty is still in the best interests of the United States. If technology advances continue as they have in the past and it is determined that a BMD system is technologically and economically feasible, the United States will be faced with the decision to either modify or withdraw from the treaty, as allowed by the treaty.

Arguments for BMD

Let me now address four reasons a ballistic missile defense system is in the best interests of the United States.

Enhances Deterrence. A demonstrated effective ballistic missile defense system deters aggression against the United States from the Soviet Union. The Soviets would face significantly increased uncertainties. And the Soviets historically have been deterred from aggression when faced with

great uncertainties. Deployment of a BMD system by the United States would decrease the effectiveness of a Soviet strategic strike, thus reducing their confidence of achieving favorable results with a ballistic missile attack. It is the U.S. policy to deter war; but if deterrence fails, it is also our policy to ensure the cessation of hostilities on favorable terms. An effective ballistic missile defense system, when deployed, will enhance deterrence and implement our policy by greatly complicating the Soviet targeting problem, and, if deterrence failed, by limiting damage from an attack. As President George Washington said, "To be prepared for war is one of the most effectual means of preserving peace." A deployed BMD system would be continuously prepared for defense and thus, preserving peace.

Safer Form of Deterrence. Deterrence based on defense vice offense alone is an inherently safer form of deterrence. Strategic defenses, by nature, do not threaten other nations. A ballistic missile defense system could only be used against an attacker's missiles, not its homeland. And this action would come only after the launch of offensive missiles against the United States. It is this aspect that leads me to believe a BMD system is a stabilizing deterrent and should be a national priority.

Protect Against Accidental Launch/Revenge Attacks. A Phase I BMD system could protect many countries against the accidental launch of a ballistic missile. In addition, terrorist countries

or their surrogates would not be able to hold the United States hostage using the threat of a limited ballistic missile attack. This protection will become even more valuable if the proliferation of ballistic missiles and chemical, biological, or nuclear warheads continues throughout the world.

The concept of strategic deterrence through nuclear retaliation does not necessarily apply to terrorist countries or their surrogates. A highly effective defense against a small attack--such as a "revenge" attack by a terrorist country which may have acquired a few ballistic missiles--would be capable with a Phase I BMD system.

Catalyst for Real Arms Reductions. The Soviet Union's superpower status is based **exclusively** on its military might, in particular its strategic nuclear weapons capability. In contrast, the United States superpower position has been gained and retained because of military **and** economic might, as well as

the political and social qualities of the country. The Soviet leadership today recognizes the need for change in the economic and social fabric of their nation--thus "Glasnost and Perestroika."

Deployment of a BMD system by the United States would reduce the military value of Soviet ballistic missiles and complicate the response options available. Possible responses would be difficult and costly. Recognizing the economic and social

difficulties the Soviet Union is currently facing, deployment of a BMD system could be a catalyst for real arms reduction. It's no coincidence that the Soviets have kept coming back to the negotiating table as long as the prospect for a U.S. BMD deployment is real.

Having stated the merits of deploying a ballistic missile defense, it's important to ask whether BMD is **operationally** possible.

BMD - An Operational Assessment

The U.S. Space Command has analyzed, from an operational perspective, the BMD effectiveness requirements as stated by the Joint Chiefs of Staff, the Soviet reactive ballistic missile threat of the Defense Intelligence Agency, and the Phase I ballistic missile defense architecture of the SDI Organization. Based on that analysis, it is apparent that the Phase I ballistic missile defense system can be operated to meet or exceed the JCS-established requirements.

Since its formation in 1985, the United States Space Command has had a broad ballistic missile defense planning mission. To support the acquisition process, U.S. Space Command was tasked in December 1987 to develop a concept of operations for the Phase I ballistic missile defense system. The concept of operations, which was approved for further planning earlier this year, is a baseline document describing how the operational commanders would

employ a Phase I BMD system. Detailed planning annexes are being developed to provide specific descriptions of operational guidelines, operational support concepts, transition planning, and specific operational requirements. The end result will be a family of operational planning documents to support DOD's acquisition process and provide the research and development community with an operational perspective. Such a perspective is essential if operationally feasible deployments are to occur.

Largely in support of the concept of operations development, U.S. Space Command has analyzed in terms of broad operational defense functions both the technical characteristics and the time lines under which a BMD system must operate. This approach enhances the development of realistic operational requirements for the research and development community, while providing a warfighting perspective to the planning community at large.

At this time, I believe that a ballistic missile defense is operationally feasible. Furthermore, the decision time lines and weapons assignment process for ballistic missile defense do not appear overly difficult. Although the time lines for BMD are relatively short and stressing, many air defense time lines faced today are short and more demanding in a relative sense as those a commander would face defending against a Soviet ballistic missile attack. For example, a NATO commander may have as little as 14 minutes to defend against a Warsaw Pact air attack. The Israelis have even shorter time lines to defend their country from air or ballistic missile attack by neighboring nations.

During a land-based ballistic missile attack against the U.S., a commander would have up to 30 minutes from missile launch to impact in which to defend. Today, with our current space systems, we are able to detect a ballistic missile launch **with certainty** in a very short time. The NORAD Command Director receives launch detection notification messages and makes an attack assessment within four minutes of launch. This system is operationally tested nearly everyday, is accurate, and virtually foolproof. With the new sensor systems which would be deployed as part of the Phase I BMD concept, these detection and analysis times will be reduced even further.

The key to the overall effectiveness of a Phase I BMD system is the leverage gained from engagement in the boost and post-boost phases of flight. **The penalty for engagement delay is significant.** If engagement can be successfully accomplished during the boost and post-boost vehicle phases of flight prior to reentry vehicle (RV) dispersion,--and I believe it can--the number of targets is reduced dramatically. The rules of engagement will determine how effective we are in achieving this leverage. If the commander is given rules of engagement that support a **controlled but rapid response** to ballistic missile attack, the Phase I architecture can be operated to **exceed** stated requirements.

The rules of engagement will have to permit rapid execution of defense strategies. Sensors and nonnuclear interceptors would be postured so that, upon validation of an attack, defense

measures under human control would be immediately taken. This would allow maximum attrition of warheads in boost and post-boost vehicle phases prior to RV dispersion, maximum time to assess the defense effectiveness, and maximum time to refine the strategy and direct remaining defense assets.

A submarine-launched ballistic missile attack could give the U.S. as little as eight minutes warning time. While this is substantially less time in which to defend, there are some not-so-obvious advantages in defending against an SLBM. A missile rising out of the water toward North America can be immediately identified as a threat. No country, at least today, launches missiles from the ocean with friendly intentions. Therefore, if we detect a missile launch from the ocean which is proceeding toward the U.S. or its allies, we are assured it is of a hostile nature and defense procedures can begin immediately. With proper rules of engagement, defense against an SLBM attack can begin even earlier than for an ICBM attack.

In addition to operating on short time lines, a deployed ballistic missile defense system must control hundreds, and possibly thousands, of nearly simultaneous engagements, must discriminate reentry vehicles from decoys, must be available constantly, and must be survivable. Accordingly, the BMD command and control structure will effect the successful employment of a BMD system. The operational commander of a BMD system will have to structure his lines of command so as to ensure immediate response by the BMD operators upon decision to engage. This may

make it necessary for the commander to eliminate all intermediate layers of command to meet the requirements for defense, especially in the boost phase. This would ensure that the operators receive the engagement orders in the shortest time.

Another area impacting BMD system operations is offense-defense integration. Preplanned defense options are required to allow the National Command Authorities to select the appropriate response or combination of responses. These options would be situationally dependent, just as the range of preplanned retaliatory options are today. The defensive response will, to a large extent, be dependent on the retaliatory option selected by the NCA. Retaliatory options and defense options must be coordinated to ensure optimum execution of the total national strategy.

The U.S. Space Command will understand all factors of BMD operations even better as it tests, evaluates, and exercises BMD concepts of operation in the National Test Facility at Falcon Air Force Base, Colorado. This test bed will allow the crucial war gaming, or command and control simulations, necessary to test the effectiveness of battle management systems, rules of engagement, command structure, and offense/defense integration. War gaming will ensure operational confidence in the overall layered ballistic missile defense system.

If the decision is made to develop and deploy a Phase I BMD system, the deployment process must naturally include procedures for integrating these future systems with existing elements of the tactical warning and attack assessment system. The Air Force System Integration Office in Colorado Springs has developed an initial transition planning concept for this integration. While more planning needs to be done in this area, it's apparent that such transition must be accomplished incrementally. Just as the Phase I BMD architecture cannot be deployed overnight, our existing space and ground-based warning system cannot be replaced overnight. The community's planning efforts for integration are under way, and will continue as the U.S. prepares for a development and deployment decision.

Conclusion

Today, it's clear that Soviet ballistic missile forces are the most serious threat to our institutions and society, in fact our very way of life. In the near future, other countries may possess the capability to hold us hostage with ballistic missiles. As General Colin Powell stated in a speech in Washington D.C. on August 18, 1989, "Weakness invites tyrants and war. Strength deters both tyrants and war." A deployed BMD system would provide the United States a new and safer strength to deter both tyrants and war. The time is right, especially now that technology will allow us to do it, to take America's future back into it's own hands.

Ballistic missile defenses would allow the nation a safer way to counter increasing Soviet and evolving Third World threats, while offering our country an attractive new option based on defense rather than offense alone. Vice President Quayle, speaking on the sixth anniversary of former President Reagan's March 1983 address, said that "strategic defense is technologically feasible, strategically necessary, and morally imperative." I would add that it is also **operationally feasible.** The strategic defense issue is certainly one of great importance and complexity, and advocates and detractors abound on all sides. A national decision point is rapidly approaching on development and deployment of this vital system. We must all insist that the debate be well grounded in the facts of technical feasibility, effectiveness, and cost. After all, the purpose of a ballistic missile defense system is the survival of our nation, its people, values, and institutions.